Trout

Trout Overview

Volunteer monitoring began at Trout Lake in 1996 and has continued through 2004. The data indicate this lake is relatively high in primary productivity (borderline eutrophic) with good to fair water quality.

Trout Lake has a street end public access, and residents should keep a close eye on aquatic plants growing nearshore to catch early infestations of Eurasian milfoil, Brazilian elodea, and other aquatic noxious weeds.

Physical Parameters

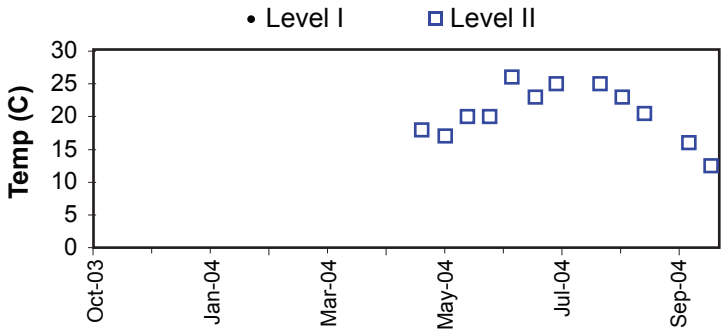
Secchi transparency ranged from 1.7 to 2.3 m from April through October, averaging 2.0 m which placed it in the lower range for water clarity among small lakes monitored in 2004. Water temperatures reached 26.0 degrees Celsius, among the warmest of the group for maximum temperature recorded.

Complete records were reported for lake level and precipitation. The lake level followed the regional pattern of winter high - summer low stands, with some sensitivity to very large rain events.

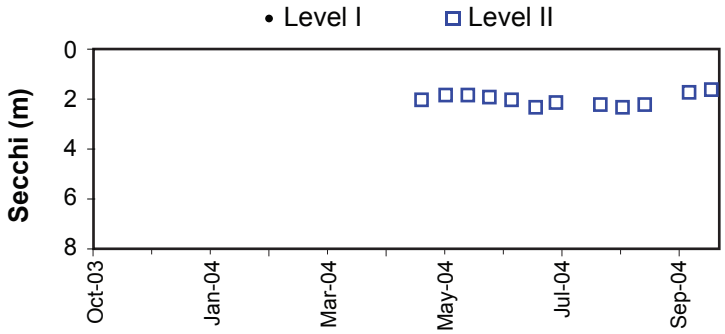
Nutrient Analysis and TSI Ratings

Total nitrogen decreased steadily over spring, while total phosphorus remained relatively stable, with the exception of a peak in late May. The N:P ratio ranged from 21 to 52, averaging 37 which suggested poor conditions for nuisance bluegreen growth.

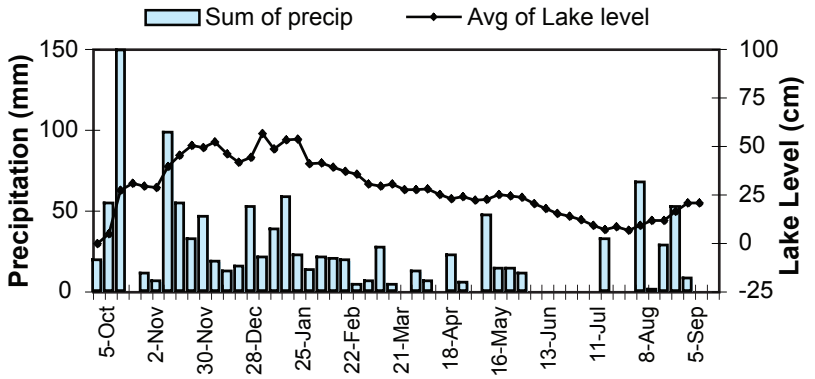
Lake Temperature



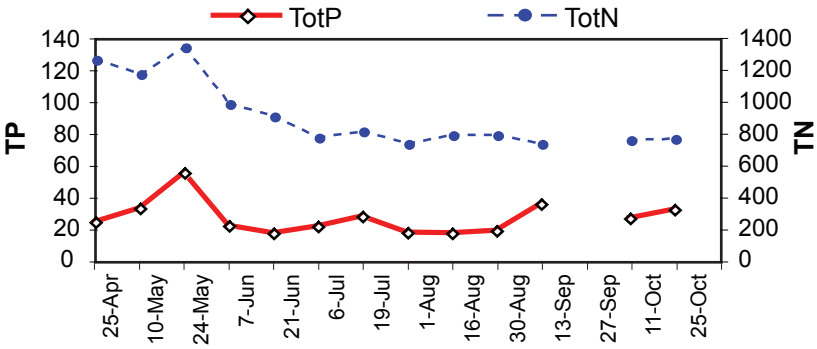
Secchi Depth



Lake Level and Precipitation



Nutrient Analysis



Profile data indicate that thermal stratification was present early in the season and persisted through the summer. Concentrations of phosphorus in the deep water increased over summer, indicating accumulation due to sediment release. Chlorophyll data indicated that algae were more abundant in the middle depths of the water column.

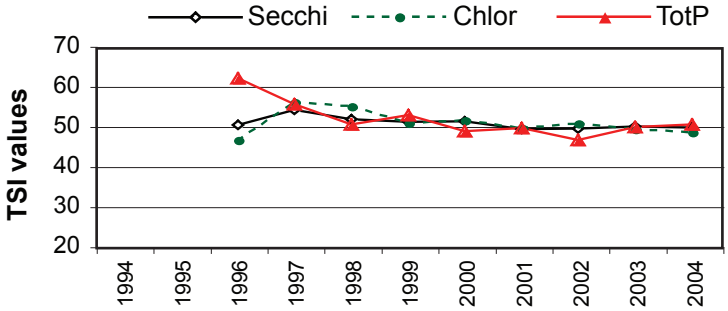
In 2004 the averages of the three TSI indicators were very close together, on the borderline between mesotrophy and eutrophy. The lake appears to have been relatively stable since 2000.

Chlorophyll Concentrations and Algae

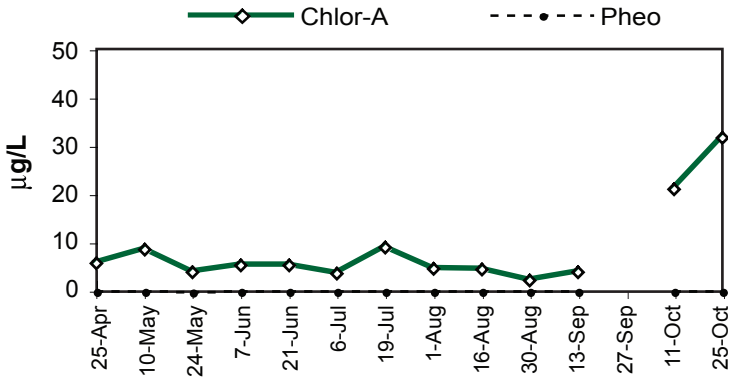
Chlorophyll concentrations at 1 m remained moderately low until mid September and increased greatly in October to the peak value. This was caused by a bloom of the bluegreen *Aphanizomenon flos-aquae*, similar to past years. Other commonly occurring algae through the season included the dinoflagellate *Ceratium hirundinella*, and a variety of cryptophytes and chlorophytes

Date	Secchi	depth-m	degC	Chlor-A	TP µg/L	TN µg/L
5/24/04	1.8	1	20.0	4.16	55.6	1350
		4	8.5	2.98	29.1	1010
		7	6.0		24.6	1060
8/30/04	2.3	1	23.0	2.40	19.2	798
		4	14.0	42.10	41.0	1040
		7	7.0		403.0	3520

TSI Ratings



Chlorophyll a Concentrations (ug/L)



Common Algae

	Group
Aphanizomenon flos-aquae	Cyanobacteria
unidentified single cells	Chlorophyta
Rhodomonas sp	Cryptophyta

Trout

2004 Level I Data

Daily Data Summary

Week of	Sum of precip. (mm)	# of days	Avg of lake level (cm)	# of days
28-Sep-03	0.0	4	-2.0	4
5-Oct-03	19.0	7	-0.7	7
12-Oct-03	54.0	7	4.1	7
19-Oct-03	156.0	7	26.7	7
26-Oct-03	0.0	7	30.1	7
2-Nov-03	11.0	7	29.0	7
9-Nov-03	6.0	7	28.0	7
16-Nov-03	98.0	7	39.0	7
23-Nov-03	54.0	7	44.6	7
30-Nov-03	32.0	7	49.9	7
7-Dec-03	46.0	7	48.7	7
14-Dec-03	18.0	7	50.7	7
21-Dec-03	12.0	7	44.6	7
28-Dec-03	15.0	7	40.6	7
4-Jan-04	52.0	7	46.1	7
11-Jan-04	21.0	7	55.3	7
18-Jan-04	38.0	7	47.9	7
25-Jan-04	58.0	7	54.4	7
1-Feb-04	22.0	7	50.6	7
8-Feb-04	13.0	7	39.6	7
15-Feb-04	21.0	7	40.9	7
22-Feb-04	20.0	7	38.4	7
29-Feb-04	19.0	7	36.3	7
7-Mar-04	4.0	7	34.1	7
14-Mar-04	6.0	7	29.6	7
21-Mar-04	27.0	7	29.0	7
28-Mar-04	4.0	7	29.6	7
4-Apr-04	0.0	7	26.6	7
11-Apr-04	12.0	7	27.4	7
18-Apr-04	6.0	7	27.0	7
25-Apr-04	0.0	7	24.1	7
2-May-04	22.0	7	22.6	7
9-May-04	5.0	7	23.1	7
16-May-04	0.0	7	21.4	7
23-May-04	47.0	7	22.6	7
30-May-04	14.0	7	24.4	7
6-Jun-04	14.0	7	23.6	7
13-Jun-04	11.1	7	22.7	7
20-Jun-04	0.0	7	19.6	7
27-Jun-04	0.0	7	17.0	7
4-Jul-04	0.0	7	14.4	7
11-Jul-04	0.0	7	13.0	7
18-Jul-04	0.0	7	11.1	7
25-Jul-04	0.0	7	8.0	7
1-Aug-04	32.0	7	6.6	7
8-Aug-04	0.0	7	7.6	7
15-Aug-04	0.0	7	5.7	7
22-Aug-04	67.0	7	9.4	7
29-Aug-04	1.0	7	11.0	7
5-Sep-04	28.0	7	11.4	7
12-Sep-04	52.0	7	16.6	7
19-Sep-04	8.0	7	20.0	7
26-Sep-04	0.0	5	20.0	5
Min	0.0		-2.0	
Max	156.0		55.3	
Total	1145.1			

Weekly Data Summary

Sample date	Sample time	Secchi (m)	Temp (°C)	Algae* (Shore)	Algae* (at site)	Goose Count*
Min		0.0	0.0			
Max		0.0	0.0			

* See introduction for discussion of algae assessment and goose count methods.

2004 Level II Data

Date (2004)	Temp (°C)	Secchi (m)	Chl-*a* (µg/l)	TP (µg/l)	TN (µg/l)	Algae Obsv.	N:P	Calculated TSI		
								Secc	chl-a	TP
25-Apr	18.0	2.0	5.93	24.7	1270		51	50.0	48.0	50.4
10-May	17.0	1.8	8.81	33.2	1180	1	36	51.5	51.9	54.7
24-May	20.0	1.8	4.16	55.6	1350	1	24	51.5	44.6	62.1
7-Jun	20.0	1.9	5.61	22.2	993		45	50.7	47.5	48.9
21-Jun	26.0	2.0	5.61	17.5	916		52	50.0	47.5	45.4
6-Jul	23.0	2.3	3.84	22.0	783		36	48.0	43.8	48.7
19-Jul	25.0	2.1	9.29	28.0	822		29	49.3	52.4	52.2
1-Aug	25.0	2.2	4.81	17.8	744	1	42	48.6	46.0	45.7
16-Aug	25.0	2.2	4.65	17.5	796	1	45	48.6	45.6	45.4
30-Aug	23.0	2.3	2.40	19.2	798	1	42	48.0	39.2	46.8
13-Sep	20.5	2.2	4.17	35.8	742		21	48.6	44.6	55.8
27-Sep										
11-Oct	16.0	1.7	21.30	26.8	767	2	29	52.3	60.6	51.6
25-Oct	12.5	1.6	31.90	32.6	776	2	24	53.2	64.5	54.4
	Temp (°C)	Secchi (m)	Chl-*a* (µg/l)	TP (µg/l)	TN (µg/l)	Algae	N:P	Calculated TSI		
								Secc	chl-a	TP
Mean	20.8	2.0	8.7	27.1	918.2	1.3	37	50.0	48.9	50.9
Median	20.5	2.0	5.6	24.7	798.0	1	36	50.0	47.5	50.4
Min	12.5	1.6	2.4	17.5	742.0	1	21	48.0	39.2	45.4
Max	26.0	2.3	31.9	55.6	1350.0	2	52	53.2	64.5	62.1
Count	13	13	13	13	13	7	13	13	13	13

TSI Average = 50.0